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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/018,098	12/11/2001	Lutz Fink	FINK-1 (PCT)	7202

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EXAMINER

RAO, SHRINIVAS H

ART UNIT	PAPER NUMBER
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2814

DATE MAILED: 04/23/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

**Application No.**

10/018,098

**Applicant(s)**

FINK, LUTZ

**Examiner**

Steven H. Rao

**Art Unit**

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 11 December 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 11-20 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☐ Claim(s) 11-20 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 13 June 2000 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- 1) ☐ Certified copies of the priority documents have been received.
  - 2) ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - 3) ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948)                                    | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

### ***Priority***

Receipt is acknowledged of paper submitted under 35 U.S.C. 119(a)-(d) from German Patent Application Number 19927694.3 filed on June 17, 1999 and under 35 U.S.C. 371 from PCT/DE00/01934 filed June 20, 2000, which papers have been placed of record in the file.

### ***Preliminary Amendment Status***

Acknowledgment is made of entry of preliminary amendment filed 11/12 /2001 on April 01, 2003.

Therefore claims 11 to 20 as recited in the amendment are currently pending in the Application.

### ***Drawings***

The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the transit channel 54 recited in claim 16 must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

***Claim Rejections - 35 USC § 112***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 11 –20 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claim 11 the phrase “ readable if required “ renders the claim indefinite because it is not clear what Applicants’ intend to include /exclude in the claims by the expression” if required” .

Similarly “ assembled in a insulated way “ is not understood .

Claims 12 –20 are rejected at least for depending upon rejected claim 11.  
Appropriate correction is required.

***Claim Objections***

Claims 11 to 20 are objected to because of the following informalities :

It appears Applicants’ want to claim “ holes” as in electrons and holes being charge carriers when they recite “ gaps” .

Appropriate correction is required.

*.Claim Rejections - 35 USC § 102*

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 11-18 are rejected under 35 U.S.C. 102(b) as being anticipated by Schiebel et al. ( U.S. Patent No. 5,396,072, herein after Scheibel).

With respect to claim 11 , to the extent understood, Scheibel describes a semiconductor sensor with a pixel structure (1), ( Schiebel col. 1 lines 25-30) in which a capacitance is designed to each pixel that stores the charge, that is readable if required, and the pixel structure (1) is mainly completely covered with a conductive layer (11) ( Schiebel col. 1 lines 34, element # 4, Schiebel col.6 lines 14-24 readable image) characterized in that the sensor is designed for direct detection of electrons and that gaps (22) are assembled between the pixel surface coating (11) of each single pixel, the surface of the gaps (22) between the pixels being covered with a second conductive layer (21) ( Schiebel figure 1 # 11, col. 1 lines 41) that is assembled in an insulated way from the pixel surface coatings (11) .

It is noted that the recitation , “ in which a capacitance is designed to each pixel that stores the charge and converts it into voltage “ is taken to be an intended use recitation and it is well settled law “ it has been held that a recitation with respect to the manner in which a claimed apparatus is intended to be

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employed does not differentiate the claimed apparatus from a prior art apparatus satisfying the claimed structural limitations." Ex parte Masham , 2 USPQ 1647 ( 1987) .

Secondly it is noted that every capacitor by definition is designed to store a charge and convert it to voltage . It is an inherent function of every capacitor to store charge and convert it to voltage when desired.

Similarly , the recitation , "sensor is designed for direct detection of electrons and that` gaps (22) are assembled between the pixel surface coating " is taken to be an intended use recitation and therefore does not distinguish over the prior art showing the same apparatus.

With respect to claim 12, to the extent understood, Schiebel describes a Semiconductor sensor according to claim 11, characterized by the pixel. surface coatings (11) and the second conductive layer (21) consisting of metal or any other conductive, light :impervious material. ( Schiebel col. 5 lines 2, it is noted that metal are well known opaque conductors).

With respect to claim 13 to the extent understood, Schiebel describes a Semiconductor sensor according to claim 12, characterized by the pixel. surface coatings (11) and the second conductive layer (21) consisting of aluminum. ( col. 5 line 26 gold or Aluminum)

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With respect to claim 14 to the extent understood, Schiebel describes Semiconductor sensor according to claim 11, characterized by the second conductive layer (21) being designed as capacitor electrode. ( Schiebel col. 1 line 36 # 11 collecting electrodes).

With respect to claim 15 to the extent understood, Schiebel describes a Semiconductor sensor according to claim 11, characterized by a potential being applied to the second conductive layer (21). ( Schiebel col. 1lines 39-42 , potential applied to electrode 11).

With respect to claim 16 to the extent understood, Schiebel describes a Semiconductor sensor according to claim 11, characterized by the detection surface of the sensor being provided with an electron intensifying coating (5) ( Scheibel col. 5 lines 30-45) and transit channels (54) to the pixel surfaces being intended. ( Scheibel , figures 1,4).

With respect to claim 17 to the extent understood, Schiebel describes a semiconductor sensor according to claim 16, characterized by the electron intensifying coating (5) being provided with a conductive thin layer (52, 53) each on the upper and lower side, to which a electric potential is applied. ( Schiebel photosensitive layer 3 covered on top by thin conductive film 4 on top and 11 on bottom).

With respect to claim 18 to the extent understood, describes a semiconductor sensor according to claim 11, characterized by neighboring pixel surfaces (11) having different potential. ( Scheibel col. 5 lines 50 to col. 6 line 24) .

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

**B.** Claims 19-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Schiebel et al. ( U.S. Patent No. 5,396,072, herein after Schiebel) as applied to claims 1- 18 above and in view of . Bierig et al. ( U.S. Patent No. 3,902,095, herein after Bierig).

It is noted that claims 19 and 20 describe use and for reasons stated under claim 11, the law stated by Ex parte Masham is also applicable here it has been held that a recitation with respect to the manner in which a claimed apparatus is intended to be employed does not differentiate the claimed apparatus from a prior art apparatus satisfying the claimed structural limitations." Ex parte Masham , 2 USPQ 1647 ( 1987) .

With respect to claim 19 to the extent understood, Scheiel describes the .use of a semiconductor sensor according to claim 11, ( Scheibel Abstract line 15) .



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Scheibel does not specifically mention the sensor being assembled in a vacuum system with photo cathode which converts photons into electrons in an image orientated way.

Bierig in col. 2 lines 59-62 describes the use of vacuum (electron beam semiconductor ) tube and cathodes which converts photons into electrons in an image orientated way to be used in high power and broadband applications with improved frequency response characteristics.

Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention to include Bierig's vacuum system with photo cathode which converts photons into electrons in an image orientated way in Schiebel's device so that the device can be used in high power and broadband applications with improved frequency response characteristics. ( Bierig col. 2 lines 58-61 and col.1 lines 63-65) .

With respect to claim 20 to the extent understood, Schiebel describes the device according to claim 19, the vacuum system being equipped with one or more multi channel plates for the intensification of the electron flow. ( Bierig col. 4 lines 20-27).

Any inquiry concerning this communication or earlier communication from the examiner should be directed to Steven H. Rao whose telephone number is (571) 272-1718. The examiner can normally be reached on Monday- Friday from approximately 7:00 a.m. to 5:30 p.m.

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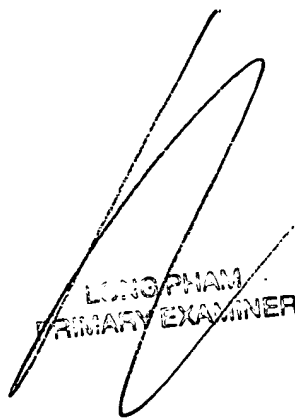
Any inquiry of a general nature or relating to the status of this application should be directed to the Group receptionist whose telephone number is (571) 272-0956. The Group facsimile number is (571) 872-9306.



Steven H. Rao

Patent Examiner

March 19, 2004.



LONG PHAM  
PRIMARY EXAMINER